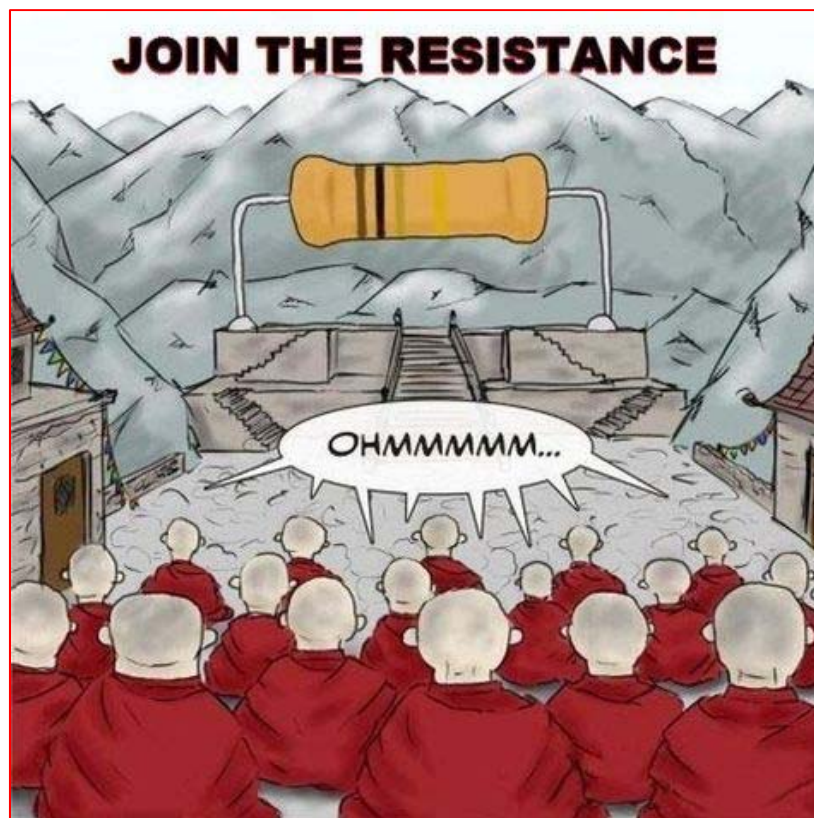




Next Meeting details will be emailed

Latest meeting details found on club website at

<http://nevarc.org.au/>



ACMA Qualifications Framework Outcome and Submissions Released	2
Shepparton Hamfest Details	2
Cranbourne Hamfest Report	3
The real reasons nothing can ever go faster than light	4
RUSSIA'S 'SPACE APPARATUSES INSPECTORS' RAISE FEARS OF SATELLITE SABOTAGE	8
THE MARCONI CENTENARY	10
SECRET COLD WAR RADIO STATIONS STILL BROADCAST	11
DRIVER'S LICENCE	12
Phone	13
BOOK	14
NEVARC Nets	15
NEVARC Club Profile	16

ACMA Qualifications Framework Outcome and Submissions Released



The ACMA have released the outcome and submissions to their consultation - New approaches to amateur radio qualification arrangements.

This consultation sought new approaches to the way that amateur radio operator qualifications are conferred.

The current arrangements have been in place for 10 years and the Deed of Agreement with the WIA expires in February 2019.

The ACMA in the consultation paper outlined three possible approaches to how amateur radio qualifications are conferred in the future.

Following the consideration of submissions the ACMA have settled on Approach No. 1 - an approved body to provide training, conduct examinations and issue certificates of proficiency through delegation under the Act.

A proposed criterion under approach 1 is that the organisation is a Registered Training Organisation (RTO). As part of the tender, the Commonwealth expects to express a preference that the successful tenderer is either an RTO, has the capacity to become an RTO before the contract commencement date, or is partnered or affiliated with an RTO.

Qualifications would be issued as certificates of proficiency under the Act. This would allow the ACMA to continue to meet its domestic and international obligations.

The ACMA is also considering the establishment of a Syllabus Review Panel to ensure that the amateur syllabus remains fit for purpose.

The WIA is currently preparing for the release and response to the Tender in late August - early September.

For further information take a look at:

<https://www.acma.gov.au/Home/theACMA/new-approaches-to-amateur-radio-qualification-arrangements>



S.A.D.A.R.C. Comms Day/Hamfest will be held on

Sunday 10th September at St Augustines Hall, Orr Street Shepparton

This is our usual venue and the doors will open at 10:00am for the public.

\$5.00 door entry fee can be purchased before 10:00am for the door line up.

There will be plenty quality food at good prices, plenty of comfortable seating with tables for a chat/QSO.
As well as a raffle and door prizes on the day.

Our usual vendors will all be there. Plus many other tables of pre loved equipment, about 30 tables all up in total.

Shepparton Hamfest proceeds go towards the upkeep and improvement of the VK3RGV repeater site.

St Augustines Hall, Shepparton. Vic Roads map 273 Ref M8

Cranbourne Hamfest Report

Time to get rid of some more junk, so I attended the Cranbourne Hamfest to try my luck.

My luck was pretty good, with the car only taking a quarter of what I took there back, on the return journey home.

The key to success of course is dirt cheap prices. I estimate about four more Hamfests to go and all my junk will be gone completely.

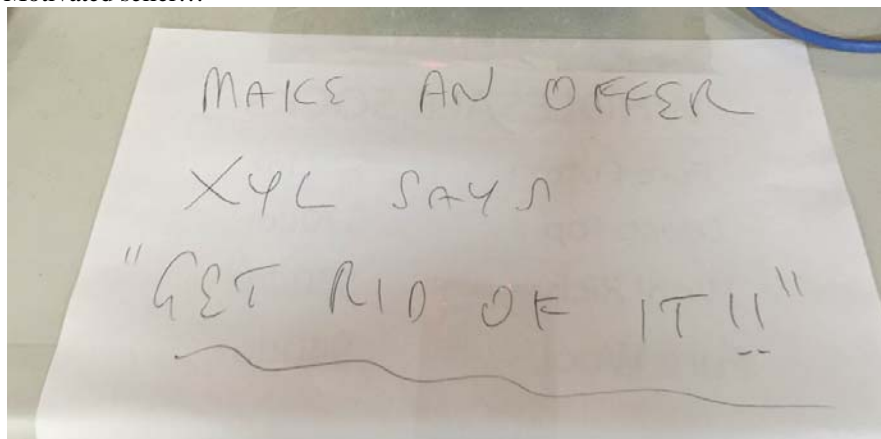
The roads were quiet and only an under an hour to arrive and setup in half an hour.

All the usual faces were seen, along with all the usual junk on sale (HI)

VK3CH table of junk and socks. All of the radio junk stuff below got sold, not bad for two hours work



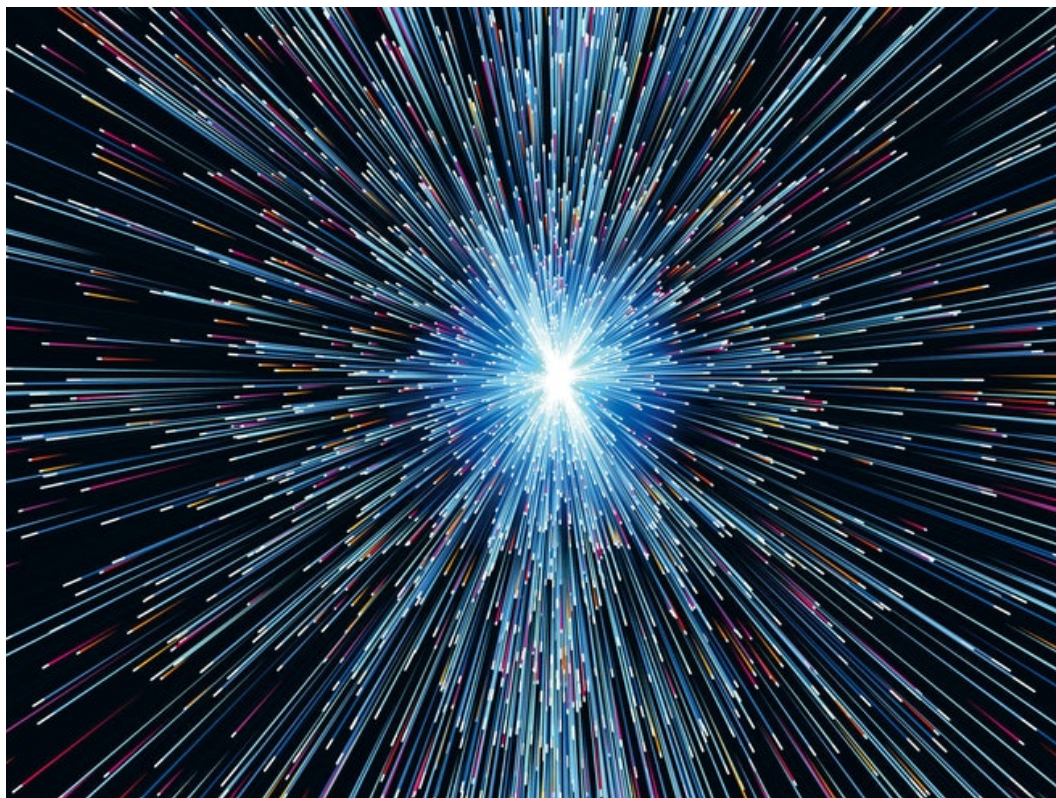
Motivated seller...



As I was on my own, no time to mingle but seemed a good day.

~Mick VK3CH

The real reasons nothing can ever go faster than light



We are told that nothing can travel faster than light. This is how we know it is true
It was September 2011 and physicist Antonio Ereditato had just shocked the world.

The announcement he had made promised to overturn our understanding of the Universe. If the data gathered by 160 scientists working on the OPERA project were correct, the unthinkable had been observed.

Particles – in this case, neutrinos – had travelled faster than light.

This time the scientists got it wrong

According to Einstein's theories of relativity, this should not have been possible. And the implications for showing it had happened were vast. Many bits of physics might have to be reconsidered.

Although Ereditato said that he and his team had "high confidence" in their result, they did not claim that they knew it was completely accurate. In fact, they were asking for other scientists to help them understand what had happened.

In the end, it turned out the OPERA result was wrong. A timing problem had been caused by a poorly connected cable that should have been transmitting accurate signals from GPS satellites.

There was an unexpected delay in the signal. As a consequence, the measurements of how long the neutrinos took to travel the given distance were off by about 73 nanoseconds, making it look as though they had whizzed along more quickly than light could have done.

Despite months of careful checks prior to the experiment, and plentiful double-checking of the data afterwards, this time the scientists got it wrong. Ereditato resigned, though many pointed out that mistakes like these happen all the time in the hugely complex machinery of particle accelerators.

Why was it such a big deal to suggest – even as a possibility – that something had travelled faster than light? And are we really sure that nothing can?

Let's take the second of those questions first. The speed of light in a vacuum is 299,792.458 km per second – just shy of a nice round 300,000km/s figure. That is pretty nippy. The Sun is 150 million km away from Earth and light takes just eight minutes and 20 seconds to travel that far.

He needed to use ever-larger amounts of additional energy to make ever-smaller differences to the speed

Can any of our own creations compete in a race with light? One of the fastest human-made objects ever built, the New Horizons space probe, passed by Pluto and Charon in July 2015. It has reached a speed relative to the Earth of just over 16km/s, well below 300,000km/s.

However, we have made tiny particles travel much faster than that. In the early 1960s, William Bertozzi at the Massachusetts Institute of Technology experimented with accelerating electrons at greater and greater velocities.

Because electrons have a charge that is negative, it is possible to propel – or rather, repel – them by applying the same negative charge to a material. The more energy applied, the faster the electrons will be accelerated.

You might imagine that you just need to increase the energy applied in order to reach the required speed of 300,000km/s, but it turns out that it just is not possible for electrons to move that fast. Bertozzi's experiments found that using more energy did not simply cause a directly proportional increase in electron speed.

As objects travel faster and faster, they get heavier and heavier

Instead, he needed to use ever-larger amounts of additional energy to make ever-smaller differences to the speed the electrons moved. They got closer and closer to the speed of light but never quite reached it.

Imagine travelling towards a door in a series of moves, in each of which you travel exactly half the distance between your current position and the door. Strictly speaking, you will never reach the door, because after every move you make you still have some distance still to travel. That is the kind of problem Bertozzi encountered with his electrons.

But light is made up of particles called photons. Why can these particles travel at the speed of light when particles like electrons cannot?

"As objects travel faster and faster, they get heavier and heavier – the heavier they get, the harder it is to achieve acceleration, so you never get to the speed of light," says Roger Rassool, a physicist at the University of Melbourne, Australia.

"A photon actually has no mass," he says. "If it had mass, it couldn't travel at the speed of light."

For the most part it is fair to say that light travels at 300,000km/s

Photons are pretty special. Not only do they have no mass, which gives them free reign when it comes to zipping about in vacuums like space, they do not have to speed up. The natural energy they possess, travelling as they do in waves, means that the moment they are created, they are already at top speed.

In fact, in some ways it makes more sense to think of light as energy rather than as a flow of particles, though truthfully it is – a little confusingly – both.

Still, light sometimes appears to travel more slowly than we might expect. Although internet technicians like to talk about communications travelling at "the speed of light" through optical fibres, light actually travels around 40% slower through the glass of those fibres than it would through a vacuum.

In reality, the photons are still travelling at 300,000km/s, but they are encountering a kind of interference caused by other photons being released from the glass atoms as the main light wave travels past. It is a tricky concept to get your head around, but it is worth noting.

Similarly, special experiments with individual photons have managed to slow them down by altering their shape.

Still, for the most part it is fair to say that light travels at 300,000km/s. We really have not observed or created anything that can go quite that quickly, or indeed more quickly. There are a few special cases, mentioned below, but before those, let's tackle that other question. Why is it so important that this speed of light rule be so strict?

Even though the distance has increased, Einstein's theories insist that the light is still travelling at the same speed

The answer lies, as so often in physics, with a man named Albert Einstein. His theory of special relativity explores many of the consequences of these universal speed limits.

One of the important elements in the theory is the idea that the speed of light is a constant. No matter where you are or how fast you are travelling, light always travels at the same speed.

But that creates some conceptual problems.

Imagine shining light from a torch up to a mirror on the ceiling of a stationary spacecraft. The light will shine upwards, reflect off the mirror, and come down to hit the floor of the spacecraft. Let's say the distance travelled is 10m.

Now let's imagine that the spacecraft begins travelling at a hair-raising speed, many thousands of kilometres per second.

Time travels slower for people travelling in fast-moving vehicles

When you shine the torch again, the light will still seem to behave as before: it will shine upwards, hit the mirror, and bounce back to hit the floor. But in order to do so the light will have to travel diagonally rather than just vertically. After all, the mirror is now moving quickly along with the spacecraft.

The distance the light travels therefore increases. Let's imagine it has increased overall by 5m. That is 15m in total, instead of 10m.

And yet, even though the distance has increased, Einstein's theories insist that the light is still travelling at the same speed. Since speed is distance divided by time, for the speed to be the same but the distance to have increased, time must also have increased.

Yes, time itself must have got stretched. That sounds wacky, but it has been proved experimentally.

It is a phenomenon known as time dilation. It means time travels slower for people travelling in fast-moving vehicles, relative to those who are stationary.

For example, time runs 0.007 seconds slower for astronauts on the International Space Station, which is moving at 7.66 km/s relative to Earth, compared to people on the planet.

The muons are generated with so much energy that they're moving at velocities very near the speed of light

Things get interesting for particles, like the electrons mentioned above, that can travel close to the speed of light. For these particles, the degree of time dilation can be great.

Steven Kolthammer, an experimental physicist at the University of Oxford in the UK, points to an example involving particles called muons.

Muons are unstable: they quickly fall apart into simpler particles. So quickly, in fact, that most muons leaving the Sun should have decayed away by the time they reach the Earth. But in reality muons arrive at Earth from the Sun in great numbers. This was something scientists long found difficult to understand.

"The answer to this puzzle is that the muons are generated with so much energy that they're moving at velocities very near the speed of light," says Kolthammer. "So their sense of time, if you will, their internal clock, actually runs slow."

The muons were "kept alive" longer than expected, relative to us, thanks to a real, natural bending of time.

When objects move quickly relative to other objects, their length contracts as well. These consequences, time dilation and length contraction, are both examples of how space-time changes based on the motion of things – like you, me or a spacecraft – that have mass.

There are galaxies in the Universe moving away from one another at a velocity greater than the speed of light

Crucially, as Einstein said, light does not get affected in the same way – because it has no mass. That is why it is so important that all of these principles go hand-in-hand. If things could travel faster than light, they would disobey these fundamental laws that describe how the Universe works.

That sums up the key principles. At this point, we can consider a few exceptions and caveats.

For one thing, while nothing has ever been observed travelling faster than light, that does not mean it is not theoretically possible to break this speed limit in very special circumstances.

Take, for instance, the expansion of the Universe itself. There are galaxies in the Universe moving away from one another at a velocity greater than the speed of light.

There is yet another possible way in which faster-than-light travel is technically possible

Another interesting situation concerns particles that seem to be expressing the same properties at the same time, no matter how far apart they are.

This is called "quantum entanglement". In essence, a photon will flip back and forth between two possible states at random – but the flips will exactly mirror the flipping of another photon somewhere else, if the two are entangled.

Two scientists each studying their own photon will therefore get the same results at the same time, faster than the speed of light.

However, in both these examples it is crucial to note that no information is travelling faster than the speed of light between two entities. We can calculate the Universe's expansion, but we cannot observe any faster-than-light objects in it: they have disappeared from view.

As for the two scientists with their photons, while they might achieve the same result simultaneously, they could not confirm the fact with each other any more quickly than light could travel between them.

"This gets us out of any problems, because if you are able to send signals faster than light you can construct bizarre paradoxes, under which information can somehow go backwards in time," says Kolthammer.

What if instead you actively distorted space-time in a controlled way?

There is yet another possible way in which faster-than-light travel is technically possible: rifts in space-time itself that allow a voyager to escape the rules of normal travel.

Gerald Cleaver at Baylor University in Texas has considered the possibility that we might one day build a faster-than-light spacecraft. One of the ways to do this might be to travel through a wormhole. These are loops in space-time, perfectly consistent with Einstein's theories, which could allow an astronaut to hop from one bit of the Universe to another via an anomaly in space-time, a sort of cosmic shortcut.

The object travelling through the wormhole would not exceed the speed of light, but it could theoretically reach a certain destination faster than light could if it took a "normal" route.

But wormholes might not be available for space travel. What if instead you actively distorted space-time in a controlled way, to travel faster than 300,000km/s relative to someone else?

Cleaver has investigated an idea known as an "Alcubierre drive", proposed by theoretical physicist Miguel Alcubierre in 1994. Essentially, it describes a situation in which space-time is squashed in front of a spacecraft, pulling it forward, while space-time behind the craft is expanded, creating a pushing effect.

"But then," says Cleaver, "there's the issues of how to do that, and how much energy it's going to take."

Faster-than-light travel remains a fantasy at the moment

In 2008, he and graduate student Richard Obousy calculated some of the energies involved.

"We worked out that, if you assume a ship that's about 10m x 10m x 10m – you're talking 1,000 cubic metres – that the amount of energy it would take to start the process would need to be on the order of the entire mass of Jupiter."

After that, the energy would have to continue being provided constantly in order to ensure the process did not fail. No-one knows how that would ever be possible, or what the technology to do it would look like.

"I don't want to be misquoted centuries from now for predicting it would never come about," says Cleaver, "but right now I don't see solutions."

Faster-than-light travel, then, remains a fantasy at the moment.

But while that may sound disappointing, light is anything but. In fact, for most of this article we have been thinking in terms of visible light. But really light is much, much more than that.

We only see part of the spectrum (Credit: Cosmo Condina North America/Alamy Stock Photo)

Visible light is only part of the electromagnetic spectrum (Credit: Cosmo Condina North America/Alamy Stock Photo)

Everything from radio waves to microwaves to visible light, ultraviolet radiation, X-rays and the gamma rays emitted by decaying atoms – all of these fantastic rays are made of the same stuff: photons.

The difference is the energy, and therefore their wavelength. Collectively these rays make up the electromagnetic spectrum. The fact that radio waves, for instance, travel at the speed of light is enormously useful for communications.

Space-time is malleable and that allows for everyone to experience the same laws of physics

In his research, Kolthammer builds circuitry that uses photons to send signals from one part of the circuit to another, so he is well placed to comment on the usefulness of light's awesome speed.

"The idea that we've built the infrastructure of the internet for example and even before that, radio, based on light, certainly has to do with the ease with which we can transmit it," he points out.

He adds that light acts as a communicating force for the Universe. When electrons in a mobile phone mast jiggle, photons fly out and make other electrons in your mobile phone jiggle too. It is this process that lets you make a phone call.

The jiggling of electrons in the Sun also emits photons – at fantastic rates – which, of course, produces the light that nourishes life on Earth.

Light is the Universe's broadcast. That speed – 299,792.458 km/s – remains reassuringly constant. Meanwhile, space-time is malleable and that allows for everyone to experience the same laws of physics no matter their position or motion.

RUSSIA'S 'SPACE APPARATUSES INSPECTORS' RAISE FEARS OF SATELLITE SABOTAGE

Russia has sent at least four spidery drones into orbit, capable of flying about at will, and the US fears all may not be as it seems.

SPACE junk is a critical problem. Dead satellites can stay in their orbits for centuries. Others are simply too expensive and important to allow to fail. So Russia's idea of armies of small 'fix-it' space drones makes sense.

But the United States has expressed fears that all may not be as it seems.

The alarm came just days after the US Vice President Mike Pence announced plans to create a new Space Force as an independent branch of the US military.

US Assistant Secretary of State Poblete last week called attention to the recent 'abnormal' behaviour of some Russian satellites. One had been seen deploying a small craft, sending it to a nearby satellite, and bringing it back to its dock.

This new 'apparatuses inspector' joins three other mysterious Russian satellites launched between 2013 and 2015.

Nobody knows what Kosmos-2491, 2499, and 2504 are for.

But their behaviour is extremely odd.

Russia didn't tell anybody it was launching Kosmos-2491 bundled among three civilian communications satellites. It was assumed to be just another piece of space junk until startled observers noticed it move under its own power.

All three have tracked as being apparently dead in space, until suddenly engaging in unusual degrees of maneuverability for small satellites.

In April last year, one adjusted its course sufficiently to pass within just 1.2km of a derelict Chinese weather satellite. That satellite had itself been the target of a controversial Chinese anti-satellite missile test in 2007.

There's no doubt these small Russian space-drones have already demonstrated their ability to spy on satellites. But can they also repair them? And what about hijack, disable or destroy?



This 'space apparatuses inspector' could be about to fix — or sabotage — the satellite it is approaching.

WEAPONISED WALDOS

Small, busy drone satellites sitting asleep in orbit until a call arrives. Their tiny engines suddenly flare into life, causing them to climb or dive hundreds of kilometres in height, adjusting their speeds by hundreds of meters per second, and dramatically altering their orbits.

As a space maintenance and rescue service, it's an exciting prospect.

As an army of targeted killer space drones, it's terrifying.

At about the size of a small bar fridge, these robotic drones can carry retractable mechanical arms and probes. This enables them to physically manipulate any satellite it manages to get in its grasp.

That would be great for repairs and maintenance — the US has had to commit entire Space Shuttle missions to fixing the Hubble Space Telescope. They could also be used to attach updated equipment and refuel satellites when they run low.

But such drones could just as easily be used to smash sensitive optics, buckle directional transmitter arrays — or simply push a satellite out of position. Hacking modules could be attached to a sensitive satellite's surface. Or it could just as easily be grappled and dragged back to a lander so its secrets could be revealed back on the ground.

Their small engines could position the space drone amid a concealing cloud of debris. It would then lay there, dormant and undetected, for years before being activated once again. Their mobility could also allow them to position themselves along the line of secret, narrow-beam transmissions — either to jam or record the data being sent.

The possibilities are endless.

Which is why Russia's not the only nation to have tested manoeuvring satellites. The US, Sweden, Japan and China have all done so.

SPACE APPARATUS INSPECTOR

Russia has denounced Secretary Poblete's concerns as "unfounded, slanderous accusations based on suspicions."

But its own Ministry of Defence has added ample fuel to the fire.

Moscow announced in August 2017 that the Kosmos-2521 manoeuvring inspection space drone was launched from the Plesetsk launch facility on June 23, 2017. It described the system as a "small space apparatuses," adding it would be used for "examining the condition of a Russian satellite."

It added that it was a "space platform capable of carrying different payloads."

"In the longer term, a research experiment will be carried out to use the space apparatuses for examining the outward appearance of that satellite".

In October, the state-run Izvestia news source cited the Defence Ministry as saying: "In trials involving controlling the manoeuvring defence satellite, ground, and orbital communication systems were tested, and methods involving ballistic estimates and new software were employed. The space forces proved their ability to ensure the satellite's automatic undocking from the platform, the remote control of its flight, and the activation of the satellite payload, including surveillance hardware, data transfer to Earth, and data processing."

The space drone was carried by a larger satellite, Kosmos-2519, before being deployed in orbit. It then flew itself to a different orbit, where it examined another satellite, before returning to its mother craft. It's what it did on this round-trip that has the US spooked.

"(It was) not acting in a manner consistent with a satellite designed to conduct safe and responsible inspection operations," Poblete stated at a recent session of the UN Conference on Disarmament.

"Its behaviour on-orbit was inconsistent with anything seen before from on-orbit inspection or space situational awareness capabilities, including other Russian inspection satellite activities. We are concerned with what appears to be very abnormal behaviour by a declared 'space apparatuses inspector'." She did not detail what that abnormal behaviour was.

ORBITAL ARMS RACE

Russia isn't all that bothered at keeping its space combat ambitions secret. Commander of Russia's Space Force, Colonel General Sergei Surovkin, recently told state media that "assimilating new prototypes of weapons into space force military units (was a) main task facing the Aerospace Forces Space Troops".

They have a formidable array of weapons in development.

— A new interceptor fighter, the Mig-41, is purportedly intended to be an ultra-high altitude aircraft capable of carrying anti-satellite weaponry.

— The PL19/Nudol high-speed anti-satellite missile system has so far been tested at least six times.

— Existing transport aircraft are being adapted to carry the Porubshik-2 high-energy jamming system capable of blinding space and air-based radars and sensors.

— The Tirada-2S is a mobile directed-energy weapon being developed to jam satellite sensors, communications and processors.

— The new Peresvet mobile laser system is reputedly capable of shooting-down ballistic missiles as well as satellites.

US intelligence agencies say they have also observed small Chinese 'grappling' space drones in testing.

These apparently are equipped with small thrusters able to bring them close to satellites, as well as retractable robotic arms.

These join an array of three different types of ground-launched anti-satellite missiles, and a ground-based laser system.

COVERT OPERATIONS

Russia, however, isn't the only nation appearing to be playing covert games in orbit.

In January this year, a top-secret multibillion-dollar US satellite — dubbed Zuma — was launched by a Space X Falcon-9 rocket. Shortly after, rumours began to circulate that the classified mission had failed. That the project was a total loss. No new satellite was being tracked. Space X insisted absolutely everything about the Falcon-9 rocket's mission was performed perfectly. However, it refused to comment about its secret military cargo.

"After review of all data to date, Falcon 9 did everything correctly," a SpaceX statement reads. "If we or others find otherwise based on further review, we will report it immediately. Information published that is contrary to this statement is categorically false. Due to the classified nature of the payload, no further comment is possible."

The secret satellite may have failed to boot-up once in orbit. Its own propulsion and power systems may have failed. Or it could be a stealth satellite operating as intended — in secret.

It's not the only mystery the US has in orbit.

The X-37B robotic space plane has conducting experiments in orbit now for several years. One such flight lasted some 718 days. Most of these missions remain secret. But it carries its own propulsion system, as well as a small cargo bay for experimental payloads.

And the US has also been actively developing anti-ballistic missile technology in the face of growing threats from North Korea and Iran. The SM-3 interceptor missiles carried by its warships can also target satellites.

TREATY TROUBLES

There are some 1200 active satellites in orbit. Half of them belong to the United States.

Russia has proposed to the UN a new treaty banning space weaponry. But the devil is in the fine print.

Poblete says Moscow is offering a treaty banning space weapons with one hand, while busily building exactly that capability with the other.

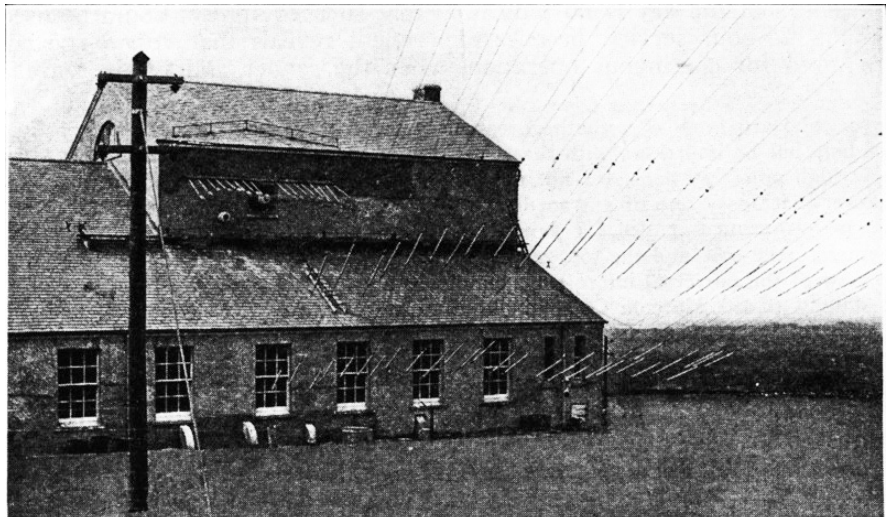
Its proposed draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT) — which is backed by China — does not provide sufficient assurances that the possibility of conflict would not extend into orbit, she says.

"Based on the drafting of the treaty language by Russia, there is nothing in the proposed PPWT that would prohibit this sort of activity or the developing, testing, or stockpiling of anti-satellite weapons capabilities, so long as it doesn't damage another object in space," she told the UN gathering.

~Internet

THE MARCONI CENTENARY

Marconi 100 Year Commemoration of First Direct Wireless Message from UK to Australia. September this year marks the 100th anniversary of the first wireless transmission between Australia and the United Kingdom. Messages were transmitted from the Marconi station at Waunfawr in Wales on the 22nd September 1918, and were received at the Wahroonga home of Ernest Fisk, the Managing Director of Amalgamated Wireless (Australasia) Limited (A.W.A.).



Two communications were sent by Morse code back to Australia. The first message was from the Prime Minister of Australia, Mr. W.M. "Billy" Hughes, who was in the UK at the time, and the second from the Minister for the Navy, Mr. Joseph Cook who accompanied Hughes. Wireless was a very new phenomenon, and the experiment between Ernest Fisk and Guglielmo Marconi was a significant achievement in the early development of world-wide wireless communications. There was considerable public interest, and political controversy, as Hughes was using his wireless message to strengthen support for the war effort in Europe at a time when support in Australia was waning. The Marconi-Fisk achievement is commemorated by a plaque located outside the original receiving site in Wahroonga, which is still a private residence.

This event has very high significance for the descendants of the Cable and Wireless company, the Overseas Telecommunications Commission (OTC), AWA, Siemens, and the entire radiocommunications community. The WIA acknowledges the ongoing commitment of the Hornsby Amateur Radio Club to commemorating Marconi every 5th year.

~WIA

SECRET COLD WAR RADIO STATIONS STILL BROADCAST



In the early days of espionage, long before the advent of burner phones, satcoms, and other modern-day spy gadgets, getting word to field agents — especially those working behind the Iron Curtain — proved a dangerous game with global consequences should the agent's cover be blown. But that's where number stations, and their uncrackable radio codes, come in.

A number station is one of many short-wave radio stations broadcasting a seemingly endless series of encoded messages throughout the world. To the untrained observer, these broadcasts sound like gibberish. They're typically recordings of a synthesized female voice (they're almost never real humans) reading strings of alphanumeric characters, often in a variety of languages including Spanish, German, English, Russian, and Chinese — or just straight morse code.

These stations first came to the public's attention in the 1960s, when a Time magazine article revealed that they had been in use since the end of WWII, however additional research by The Conet Project suggests that they might have been put in place as far back as WWI. Nobody's really sure when these systems first came online. In fact, no government in the world has ever even confirmed that these stations exist, much less what they're used for.

The leading theory behind their use — albeit one just as speculative as any other — is that these stations are transmitting encoded messages to covert intelligence agents working in hostile territories. It's not like you can just dial up a "cultural attache" working Pyongyang and ask how the spy works is going.

The number station system is, when used correctly, is virtually impossible to detect and essentially foolproof. All the agent requires is a commercially-available shortwave radio and a one-time pad to decipher the message. So long as they're not under electronic surveillance or have the one-time pad discovered, there's effectively zero chance of having the message intercepted and decrypted. According to Spycraft by Robert Wallace and H. Keith Melton the system works like this:

The one-way voice link (OWVL) described a covert communications system that transmitted messages to an agent's unmodified shortwave radio using the high-frequency shortwave bands between 3 and 30MHz at a predetermined time, date, and frequency contained in their communications plan. The transmissions were contained in a series of repeated random number sequences and could only be deciphered using the agent's one-time pad. If proper tradecraft was practiced and instructions were precisely followed, an OWVL transmission was considered unbreakable. [...] As long as the agent's cover could justify possessing a shortwave radio and he was not under technical surveillance, high-frequency OWVL was a secure and preferred system for the CIA during the Cold War.

Perhaps the best known number station is commonly known as the Lincolnshire Poacher — named after the English folk song as two of the tunes stanzas are used to separate encrypted strings — and is widely believed to be an MI6 asset. It broadcast regularly originated from the island of Cyprus, likely from the RAF base at Akrotiri. It's sister signal, dubbed Cherry Ripe, performed the same function but originated out of Australia. Neither station is still active, probably having been cycled out of use as their notoriety grew.

And even with the advent of modern, heavily-encrypted communications systems, number stations remain a viable means of issuing directives to covert agents. "Nobody has found a more convenient and expedient way of communicating with an agent," Rupert Allason, a highly regarded author on the subject of espionage, told the BBC. "Their sole purpose is for intelligence agencies to communicate with their agents in denied areas - a territory where it is difficult to use a consensual form of communications."

~Internet

DRIVER'S LICENCE

A mother was driving her little girl to her friend's house for a play date.

'Mommy,' the little girl asked, 'how old are you?'

'Honey, you are not supposed to ask a lady her age,' the mother replied.
'It's not polite.'

'OK', the little girl said, 'How much do you weigh?'

'Now really,' the mother said,
'Those are personal questions and are really none of your business.'

Undaunted, the little girl asked, 'Why did you and Daddy get a divorce?'

'That's enough questions, young lady! Honestly!'

The exasperated mother walked away as the two friends begin to play.

'My Mom won't tell me anything about her,' the little girl said to her friend.

'Well,' said the friend, 'all you need to do is look at her driver's license.
It's like a report card, it has everything on it.'

Later that night the little girl says to her mother,
'I know how old you are. You are 32.'

The mother is surprised and asked,
'How did you find that out?'

'I also know that you weigh 60 kilos.'

The mother is past surprised and shocked now.
'How in heaven's name did you find that out?'

'And,' the little girl said triumphantly,
'I know why you and daddy got a divorce.'

'Oh really?' the mother asked. 'Why?'

'Because you got an F for sex.'

The phone my sister has (she's six)



The phone I had when I was six



The phone my dad had when he was six



BOOK

Introducing the new Bio-Optic Organized Knowledge device, trade named BOOK.

BOOK is a revolutionary breakthrough in technology: no wires, no electric circuits, no batteries, nothing to be connected or switched on.

It's so easy to use, even a child can operate it. Compact and portable, it can be used anywhere—even sitting in an armchair by the fire—yet it is powerful enough to hold as much information as a CD-ROM disc.

Here's how it works:

BOOK is constructed of sequentially numbered sheets of paper (recyclable), each capable of holding thousands of bits of information. The pages are locked together with a custom-fit device called a binder which keeps the sheets in their correct sequence.

Opaque Paper Technology (OPT) allows manufacturers to use both sides of the sheet, doubling the information density and cutting costs.

Experts are divided on the prospects for further increases in information density; for now, BOOKS with more information simply use more pages. Each sheet is scanned optically, registering information directly into your brain. A flick of the finger takes you to the next sheet.

BOOK may be taken up at any time and used merely by opening it. BOOK never crashes or requires rebooting, though like other display devices it can become unusable if dropped overboard.

The "browse" feature allows you to move instantly to any sheet, and move forward or backward as you wish. Many come with an "index" feature, which pin-points the exact location of any selected information for instant retrieval.

An optional "BOOKmark" accessory allows you to open BOOK to the exact place you left it in a previous session—even if the BOOK has been closed. BOOKmarks fit universal design standards; thus, a single BOOKmark can be used in BOOKs by various manufacturers.

Conversely, numerous BOOK markers can be used in a single BOOK if the user wants to store numerous views at once. The number is limited only by the number of pages in the BOOK.

You can also make personal notes next to BOOK text entries with an optional programming tool, the Portable Erasable Nib Cryptic Intercommunication Language Stylus (PENCILS).

Portable, durable, and affordable, BOOK is being hailed as a precursor of a new entertainment wave.

Also, BOOK's appeal seems so certain that thousands of content creators have committed to the platform and investors are reportedly flocking.

Look for a flood of new titles soon.

NEVARC Nets

40M Net

Monday, Wednesday and Fridays
10am Local time (East coast)

7.095 MHz LSB

Hosted by Ron VK3AHR
Using club call VK3ANE

80M Net

Wednesday 20:30 Local time

3.622 MHz LSB

Hosted by Ron VK3AHR
Using the club call VK3ANE

2M Nets

Monday at 2000 local time on
VK3RWO repeater
146.975 MHz

Vice President, VK3CM, Brenton
Secretary, VK2FKLR, Kathleen
Treasurer, Amy



NEVARC CLUB PROFILE

History

The North East Victoria Amateur Radio Club (NEVARC) formed in 2014.
As of the 7th August 2014, Incorporated, Registered Incorporation number A0061589C.
NEVARC is an affiliated club of the Wireless Institute of Australia.

Meetings

Meetings details are on the club website, check for latest scheduled details.
Meetings held at the Belviour Guides Hall, Silva Drive West Wodonga.

VK3ANE NETS

HF

7.095 MHz Monday, Wednesday, Friday - 10am Local time
3.622 MHz Wednesday - 8.30pm Local time

VHF

VK3RWO Repeater 146.975 MHz – Monday - 8pm Local time
All nets are hosted by Ron Hanel VK3AHR using the club callsign VK3ANE

Benefits

To provide the opportunity for Amateur Radio Operators and Short Wave Listeners to enhance their hobby through interaction with other Amateur Radio Operators and Short Wave Listeners. Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts. Excellent club facilities and environment, ample car parking.

Website: www.nevarc.net.au

Postal: NEVARC Secretary
PO Box 69
Wahgunyah Vic 3683

All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of NEVARC, but published in spirit, to promote interest and active discussion on club activities and the promotion of Amateur Radio. Contributions to NEVARC News are always welcome from members.

Email attachments of Word™, Plain Text, Excel™, PDF™ and JPG are all acceptable.

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Please include a stamped self-addressed envelope if you require your submission notes returned.

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Attachments of (or thought to be) executable code or virulently affected emails will not be opened.

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While we strive to be accurate, no responsibility taken for errors, omissions, or other perceived deficiencies, in respect of information contained in technical or other articles.

Any dates, times and locations given for upcoming events please check with a reliable source closer to the event.

This is particularly true for pre-planned outdoor activities affected by adverse weather etc.

The club website <http://nevarc.org.au/> has current information on planned events and scheduled meeting dates.

You can get the WIA News sent to your inbox each week by simply clicking a link and entering your email address found at www.wia.org.au. The links for either text email or MP3 voice files are there as well as Podcasts and Twitter. This WIA service is FREE.